

#2

OIPe

RAW SEQUENCE LISTING  
 PATENT APPLICATION: US/09/977,897

DATE: 10/30/2001  
 TIME: 14:43:40

Input Set : A:\ES.txt  
 Output Set: N:\CRF3\10302001\I977897.raw

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3 <110> APPLICANT: Chen, Yih-Tai  
 4 Cao, Longguang  
 6 <120> TITLE OF INVENTION: A synthetic DNA encoding an orange seapen-derived green  
 fluorescent  
 7 protein with codon preference of mammalian expression systems and biosensors  
 9 <130> FILE REFERENCE: 41856-5  
 C--> 11 <140> CURRENT APPLICATION NUMBER: US/09/977,897  
 C--> 11 <141> CURRENT FILING DATE: 2001-10-15  
 11 <160> NUMBER OF SEQ ID NOS: 27  
 13 <170> SOFTWARE: PatentIn version 3.1  
 15 <210> SEQ ID NO: 1  
 16 <211> LENGTH: 1482  
 17 <212> TYPE: DNA  
 18 <213> ORGANISM: Ptilosarcus gurneyi  
 20 <400> SEQUENCE: 1  
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 23 agcgccaagg ccagcgtgga gggcatcgtg aacaaccacg tggtcagcat ggagggtctc 120  
 25 ggcaagggca acgtgctgtt cggcaaccag ctgatgcaga tccgggtgac caagggcggc 180  
 27 cctctgccct tcgccttcga catcgtgagc atcgcccttc agtacggcaa ccggaccttc 240  
 29 accaagtatc ccgacgacat cggcgactac ttctgtcaga gcttccctgc cggcttcttc 300  
 31 tacgagcgga acctgcggtt cgaggacggc gccatcgtgg acatccggag cgacatcagc 360  
 33 ctggaggacg acaagttcca ctacaagggt gagtaccgag gcaacggctt cctagcaaac 420  
 35 ggccctgtga tgcagaaggc catcctgggc atggagccca gcttcgaggt ggtgtacatg 480  
 37 aacagcgggc tgctggtggg cgaggtggac ctggtgtaca agctggagag cggcaactac 540  
 39 tacagctgcc acatgaagac cttctaccgg agcaaggcg gctgaagga gttccctgag 600  
 41 tacctattca tccaccaccg gctggagaag aactacgtgg aggagggcag cttcgtggag 660  
 43 cagcacgaga ccgccatcgc ccagctgacc accatcggca agcctctggg cagcctgcac 720  
 45 gagtgggtgt aaagcgggcg caagcttgcc accatggtga accggaacgt gctgaagaac 780  
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 49 gtgttcagca tggagggttt cggcaagggc aacgtgctgt tcggcaacca gctgatgcag 900  
 51 atccgggtga ccaaggcgcg ccctctgccc ttgccttcg acatcgtgag catcgccctc 960  
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 59 ggcaacggct tccctagcaa cggccctgtg atgcagaagg ccattcctggg catggagccc 1200  
 61 agcttcgagg tgggtgtacat gaacagcggc gtgctggtgg gcgaggtgga cctggtgtac 1260  
 63 aagctggaga gcggaacta ctacagctgc cacatgaaga cttctaccg gagcaagggc 1320  
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 67 gaggagggca gcttcgtgga gcagcacgag accgccatcg ccagctgac caccatcggc 1440  
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 73 <211> LENGTH: 239  
 74 <212> TYPE: PRT  
 75 <213> ORGANISM: Ptilosarcus gurneyi  
 77 <400> SEQUENCE: 2  
 79 Met Val Asn Arg Asn Val Leu Lys Asn Thr Gly Leu Lys Glu Ile Met  
 80 1 5 10 15  
 83 Ser Ala Lys Ala Ser Val Glu Gly Ile Val Asn Asn His Val Phe Ser

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84          20          25          30
87 Met Glu Gly Phe Gly Lys Gly Asn Val Leu Phe Gly Asn Gln Leu Met
88          35          40          45
91 Gln Ile Arg Val Thr Lys Gly Gly Pro Leu Pro Phe Ala Phe Asp Ile
92          50          55          60
95 Val Ser Ile Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro
96 65          70          75          80
99 Asp Asp Ile Ala Asp Tyr Phe Val Gln Ser Phe Pro Ala Gly Phe Phe
100          85          90          95
103 Tyr Glu Arg Asn Leu Arg Phe Glu Asp Gly Ala Ile Val Asp Ile Arg
104          100          105          110
107 Ser Asp Ile Ser Leu Glu Asp Asp Lys Phe His Tyr Lys Val Glu Tyr
108          115          120          125
111 Arg Gly Asn Gly Phe Pro Ser Asn Gly Pro Val Met Gln Lys Ala Ile
112          130          135          140
115 Leu Gly Met Glu Pro Ser Phe Glu Val Val Tyr Met Asn Ser Gly Val
116 145          150          155          160
119 Leu Val Gly Glu Val Asp Leu Val Tyr Lys Leu Glu Ser Gly Asn Tyr
120          165          170          175
123 Tyr Ser Cys His Met Lys Thr Phe Tyr Arg Ser Lys Gly Gly Val Lys
124          180          185          190
127 Glu Phe Pro Glu Tyr His Phe Ile His His Arg Leu Glu Lys Thr Tyr
128          195          200          205
131 Val Glu Glu Gly Ser Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln
132          210          215          220
135 Leu Thr Thr Ile Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val
136 225          230          235
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140 <211> LENGTH: 224
141 <212> TYPE: PRT
142 <213> ORGANISM: Ptilosarcus gurneyi
144 <400> SEQUENCE: 3
146 Met Val Asn Arg Asn Val Leu Lys Asn Thr Gly Leu Lys Glu Ile Met
147 1          5          10          15
150 Ser Ala Lys Ala Ser Val Glu Gly Ile Val Asn Asn His Val Phe Ser
151          20          25          30
154 Met Glu Gly Phe Gly Lys Gly Asn Val Leu Phe Gly Asn Gln Leu Met
155          35          40          45
158 Gln Ile Arg Val Thr Lys Gly Gly Pro Leu Pro Phe Ala Phe Asp Ile
159          50          55          60
162 Val Ser Ile Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro
163 65          70          75          80
166 Asp Asp Ile Ala Asp Tyr Phe Val Gln Ser Phe Pro Ala Gly Phe Phe
167          85          90          95
170 Tyr Glu Arg Asn Leu Arg Phe Glu Asp Gly Ala Ile Val Asp Ile Arg
171          100          105          110
174 Ser Asp Ile Ser Leu Glu Asp Asp Lys Phe His Tyr Lys Val Glu Tyr
175          115          120          125
178 Arg Gly Asn Gly Phe Pro Ser Asn Gly Pro Val Met Gln Lys Ala Ile

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179      130      135      140
182 Leu Gly Met Glu Pro Ser Phe Glu Val Val Tyr Met Asn Ser Gly Val
183 145      150      155      160
186 Leu Val Gly Glu Val Asp Leu Val Tyr Lys Leu Glu Ser Gly Asn Tyr
187      165      170      175
190 Tyr Ser Cys His Met Lys Thr Phe Tyr Arg Ser Lys Gly Gly Val Lys
191      180      185      190
194 Glu Phe Pro Glu Tyr His Phe Ile His His Arg Leu Glu Lys Thr Tyr
195      195      200      205
198 Val Glu Glu Gly Ser Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln
199      210      215      220
202 <210> SEQ ID NO: 4
203 <211> LENGTH: 219
204 <212> TYPE: PRT
205 <213> ORGANISM: Ptilosarcus gurneyi
207 <400> SEQUENCE: 4
209 Gly Leu Lys Glu Ile Met Ser Ala Lys Ala Ser Val Glu Gly Ile Val
210 1      5      10      15
213 Asn Asn His Val Phe Ser Met Glu Gly Phe Gly Lys Gly Asn Val Leu
214      20      25      30
217 Phe Gly Asn Gln Leu Met Gln Ile Arg Val Thr Lys Gly Gly Pro Leu
218      35      40      45
221 Pro Phe Ala Phe Asp Ile Val Ser Ile Ala Phe Gln Tyr Gly Asn Arg
222      50      55      60
225 Thr Phe Thr Lys Tyr Pro Asp Asp Ile Ala Asp Tyr Phe Val Gln Ser
226 65      70      75      80
229 Phe Pro Ala Gly Phe Phe Tyr Glu Arg Asn Leu Arg Phe Glu Asp Gly
230      85      90      95
233 Ala Ile Val Asp Ile Arg Ser Asp Ile Ser Leu Glu Asp Asp Lys Phe
234      100      105      110
237 His Tyr Lys Val Glu Tyr Arg Gly Asn Gly Phe Pro Ser Asn Gly Pro
238      115      120      125
241 Val Met Gln Lys Ala Ile Leu Gly Met Glu Pro Ser Phe Glu Val Val
242      130      135      140
245 Tyr Met Asn Ser Gly Val Leu Val Gly Glu Val Asp Leu Val Tyr Lys
246 145      150      155      160
249 Leu Glu Ser Gly Asn Tyr Tyr Ser Cys His Met Lys Thr Phe Tyr Arg
250      165      170      175
253 Ser Lys Gly Gly Val Lys Glu Phe Pro Glu Tyr His Phe Ile His His
254      180      185      190
257 Arg Leu Glu Lys Thr Tyr Val Glu Glu Gly Ser Phe Val Glu Gln His
258      195      200      205
261 Glu Thr Ala Ile Ala Gln Leu Thr Thr Ile Gly
262      210      215
265 <210> SEQ ID NO: 5
266 <211> LENGTH: 238
267 <212> TYPE: PRT
268 <213> ORGANISM: Ptilosarcus gurneyi
270 <400> SEQUENCE: 5

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272 Met Val Arg Asn Val Leu Lys Asn Thr Gly Leu Lys Glu Ile Met Ser
273 1 5 10 15
276 Ala Lys Ala Ser Val Glu Gly Ile Val Asn Asn His Val Phe Ser Met
277 20 25 30
280 Glu Gly Phe Gly Lys Gly Asn Val Leu Phe Gly Asn Gln Leu Met Gln
281 35 40 45
284 Ile Arg Val Thr Lys Gly Gly Pro Leu Pro Phe Ala Phe Asp Ile Val
285 50 55 60
288 Ser Ile Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Asp
289 65 70 75 80
292 Asp Ile Ala Asp Tyr Phe Val Gln Ser Phe Pro Ala Gly Phe Phe Tyr
293 85 90 95
296 Glu Arg Asn Leu Arg Phe Glu Asp Gly Ala Ile Val Asp Ile Arg Ser
297 100 105 110
300 Asp Ile Ser Leu Glu Asp Asp Lys Phe His Tyr Lys Val Glu Tyr Arg
301 115 120 125
304 Gly Asn Gly Phe Pro Ser Asn Gly Pro Val Met Gln Lys Ala Ile Leu
305 130 135 140
308 Gly Met Glu Pro Ser Phe Glu Val Val Tyr Met Asn Ser Gly Val Leu
309 145 150 155 160
312 Val Gly Glu Val Asp Leu Val Tyr Lys Leu Glu Ser Gly Asn Tyr Tyr
313 165 170 175
316 Ser Cys His Met Lys Thr Phe Tyr Arg Ser Lys Gly Gly Val Lys Glu
317 180 185 190
320 Phe Pro Glu Tyr His Phe Ile His His Arg Leu Glu Lys Thr Tyr Val
321 195 200 205
324 Glu Glu Gly Ser Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln Leu
325 210 215 220
328 Thr Thr Ile Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val
329 225 230 235
332 <210> SEQ ID NO: 6
333 <211> LENGTH: 237
334 <212> TYPE: PRT
335 <213> ORGANISM: Ptilosarcus gurneyi
337 <400> SEQUENCE: 6
339 Met Val Asn Val Leu Lys Asn Thr Gly Leu Lys Glu Ile Met Ser Ala
340 1 5 10 15
343 Lys Ala Ser Val Glu Gly Ile Val Asn Asn His Val Phe Ser Met Glu
344 20 25 30
347 Gly Phe Gly Lys Gly Asn Val Leu Phe Gly Asn Gln Leu Met Gln Ile
348 35 40 45
351 Arg Val Thr Lys Gly Gly Pro Leu Pro Phe Ala Phe Asp Ile Val Ser
352 50 55 60
355 Ile Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Asp Asp
356 65 70 75 80
359 Ile Ala Asp Tyr Phe Val Gln Ser Phe Pro Ala Gly Phe Phe Tyr Glu
360 85 90 95
363 Arg Asn Leu Arg Phe Glu Asp Gly Ala Ile Val Asp Ile Arg Ser Asp
364 100 105 110

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367 Ile Ser Leu Glu Asp Asp Lys Phe His Tyr Lys Val Glu Tyr Arg Gly
368      115      120      125
371 Asn Gly Phe Pro Ser Asn Gly Pro Val Met Gln Lys Ala Ile Leu Gly
372      130      135      140
375 Met Glu Pro Ser Phe Glu Val Val Tyr Met Asn Ser Gly Val Leu Val
376 145      150      155      160
379 Gly Glu Val Asp Leu Val Tyr Lys Leu Glu Ser Gly Asn Tyr Tyr Ser
380      165      170      175
383 Cys His Met Lys Thr Phe Tyr Arg Ser Lys Gly Gly Val Lys Glu Phe
384      180      185      190
387 Pro Glu Tyr His Phe Ile His His Arg Leu Glu Lys Thr Tyr Val Glu
388      195      200      205
391 Glu Gly Ser Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln Leu Thr
392      210      215      220
395 Thr Ile Gly Lys Pro Leu Gly Ser Leu His Glu Trp Val
396 225      230      235
399 <210> SEQ ID NO: 7
400 <211> LENGTH: 236
401 <212> TYPE: PRT
402 <213> ORGANISM: Ptilosarcus gurneyi
404 <400> SEQUENCE: 7
406 Met Val Val Leu Lys Asn Thr Gly Leu Lys Glu Ile Met Ser Ala Lys
407 1      5      10      15
410 Ala Ser Val Glu Gly Ile Val Asn Asn His Val Phe Ser Met Glu Gly
411      20      25      30
414 Phe Gly Lys Gly Asn Val Leu Phe Gly Asn Gln Leu Met Gln Ile Arg
415      35      40      45
418 Val Thr Lys Gly Gly Pro Leu Pro Phe Ala Phe Asp Ile Val Ser Ile
419      50      55      60
422 Ala Phe Gln Tyr Gly Asn Arg Thr Phe Thr Lys Tyr Pro Asp Asp Ile
423 65      70      75      80
426 Ala Asp Tyr Phe Val Gln Ser Phe Pro Ala Gly Phe Phe Tyr Glu Arg
427      85      90      95
430 Asn Leu Arg Phe Glu Asp Gly Ala Ile Val Asp Ile Arg Ser Asp Ile
431      100      105      110
434 Ser Leu Glu Asp Asp Lys Phe His Tyr Lys Val Glu Tyr Arg Gly Asn
435      115      120      125
438 Gly Phe Pro Ser Asn Gly Pro Val Met Gln Lys Ala Ile Leu Gly Met
439      130      135      140
442 Glu Pro Ser Phe Glu Val Val Tyr Met Asn Ser Gly Val Leu Val Gly
443 145      150      155      160
446 Glu Val Asp Leu Val Tyr Lys Leu Glu Ser Gly Asn Tyr Tyr Ser Cys
447      165      170      175
450 His Met Lys Thr Phe Tyr Arg Ser Lys Gly Gly Val Lys Glu Phe Pro
451      180      185      190
454 Glu Tyr His Phe Ile His His Arg Leu Glu Lys Thr Tyr Val Glu Glu
455      195      200      205
458 Gly Ser Phe Val Glu Gln His Glu Thr Ala Ile Ala Gln Leu Thr Thr
459      210      215      220

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VERIFICATION SUMMARY

PATENT APPLICATION: US/09/977,897

DATE: 10/30/2001

TIME: 14:43:41

Input Set : A:\ES.txt

Output Set: N:\CRF3\10302001\I977897.raw

L:11 M:270 C: Current Application Number differs, Replaced Current Application No

L:11 M:271 C: Current Filing Date differs, Replaced Current Filing Date